

Important Advances in Clinical Medicine

Epitomes of Progress — Plastic Surgery

The Scientific Board of the California Medical Association presents the following inventory of items of progress in plastic surgery. Each item, in the judgment of a panel of knowledgeable physicians, has recently become reasonably firmly established, both as to scientific fact and important clinical significance. The items are presented in simple epitome and an authoritative reference, both to the item itself and to the subject as a whole, is generally given for those who may be unfamiliar with a particular item. The purpose is to assist the busy practitioner, student, research worker or scholar to stay abreast of these items of progress in plastic surgery which have recently achieved a substantial degree of authoritative acceptance, whether in his own field of special interest or another.

The items of progress listed below were selected by the Advisory Panel to the Section on Plastic Surgery of the California Medical Association and the summaries were prepared under its direction.

Reprint requests to: Division of Scientific and Educational Activities,
California Medical Association, 731 Market St., San Francisco, CA 94103

Argon Laser Treatment of Cutaneous Vascular Lesions

ARGON PHOTOCOAGULATING LASERS have proved to be very useful in the treatment of port-wine stains (nevus flammeus) and other superficial cutaneous vascular anomalies. Highly focusable blue-green laser light is selectively absorbed by the red color in capillaries in skin and mucous membranes where it is transformed into heat intense enough to cauterize small vessels up to 0.5 mm in diameter. Other skin structures such as hair follicles and sweat glands are relatively spared, allowing reconstitution of the epidermis with minimal or no scarring in many patients. Histopathologic studies show changes of collagen coagulation in the upper 1 mm of the dermis, with an associated pronounced increase in collagen deposition and destruction of small vessels in the treated areas; the resultant wound is similar to a superficial second degree burn. Biopsy specimens taken three years following treatment showed dense fibrosis in the upper dermis, as well as no evidence of nuclear mutation or any indication of malignant degeneration.

More than 300 port-wine stains have been treated with argon photocoagulating lasers. Good results, with substantial lightening in color, have

been obtained in 65 percent to 70 percent of patients. Excellent results, with complete eradication of the lesion, are uncommon. An associated benefit of laser treatment is the ablation of nodules or a flattening of the cobblestone texture of the involved skin often seen in patients over the age of 35 years. Scarring, the most undesirable complication, is seen in approximately 5 percent to 7 percent of patients; the perioral area is most vulnerable to this particular complication. In 20 percent to 25 percent of patients treated there was little or no improvement. The laser appears to have the most salutary effects on lesions of the face and neck; treatment of trunk and extremity lesions has been disappointing. It may take many months to treat completely a large port-wine hemangioma extending over major areas of the face or neck. Patients are treated under local anesthesia as outpatients, or in some instances in an operating room under general anesthesia.

Telangiectasias, pyogenic granulomas and small capillary angiomas respond well to the blue-green laser light. Bulkier lesions such as cavernous hemangiomas do not respond well, if at all, to laser treatment. Decorative tattoos may be substantially lightened when exposed to an argon laser, but there always remains a "ghost," and scarring may be a prominent problem. Nevi and skin